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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,422	12/26/2000	Robert Williams	52352-308	9880

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EXAMINER

CASIANO, ANGEL L

ART UNIT PAPER NUMBER

2182

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/745,422

Applicant(s)

WILLIAMS, ROBERT

Examiner

Angel L. Casiano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-16 is/are rejected.
- 7) ☒ Claim(s) 9 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The present Office action is in response to application filed 26 December 2000.
2. Claims 1-17 are pending.

### *Specification*

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 7, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Booth et al. [US 6,516,352 B1] in view of Trans [US 2001/0038674 A1].

Regarding claim 1, Booth et al. teaches a network interface (see Title). The reference also teaches physical layer interface devices (PHYs; see Abstract), configured to communicate data to a link partner, according to a protocol. Booth et al. also teaches a network interface device (see Figures 5 and 7), having a media access controller (MAC). A shared management data bus is also disclosed as coupled to the PHYs and NID, carrying configuration information and auto

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negotiation results (see col. 8, lines 16-21; col. 18, lines 49-57). Furthermore, the reference teaches auto negotiation results from each PHY (see Figure 9; method “700”). However, the cited prior art fails to teach a *plurality* of network interface devices (NIDs) coupled to the PHYs. In addition, the Booth et al. does not teach *configuring* the MAC of each NID in accordance with auto negotiation results for a corresponding PHY. Regarding these limitations, Trans teaches a MAC section having a plurality of MACs (see Figure 1C, “131”, “132”). In addition, PHY device provides results (see [0185]) to the *higher-level* MAC for configuration purposes. At the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures in order to obtain a network interface system (see Booth et al.) with “precise control” (see Trans, Abstract) of network parameters, where the communication would be “measured” and “calibrated”.

As for claim 2, Booth et al. teaches the PHYs as incorporated into a single chip (see Figure 5).

As for claim 3, Booth et al. teaches management data input/output (MDIO) logic (see col. 8, line 18) for changing control values (“configuration information”) for the PHY and coupled to the data bus and NID (see col. 18, lines 52-57).

As per claim 4, Booth et al. teaches a data bus communicating the NID to a CPU (see Figures 3-5 and 7). The central processing unit (CPU) provides *prescribed* (see col. 16, “link parameters” cols. 34-35; col. 18, lines 33-35, “operating state of the device”) configuration information. Booth et al. does not teach a *plurality* of network interface devices (NIDs). Regarding this

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limitation, Trans teaches a MAC section having a plurality of MACs (see Figure 1C, “131”, “132”). In addition, PHY device provides results (see [0185]) to the *higher-level MAC* for configuration purposes. At the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures in order to obtain a network interface system (see Booth et al.) with “precise control” (see Trans, Abstract) of network parameters, where the communication would be “measured” and “calibrated”.

As per claim 7, Booth et al. teaches MAC configuration registers (see col. 20, lines 57-67).

As for claim 10, Booth et al. teaches a method for configuring a network interface (see Title, Abstract). The reference also teaches physical layer interface devices (PHYs; see Abstract), being configured to communicate data to a link partner, according to a protocol. Booth et al. also teaches a network interface device (see Figures 5 and 7), having a media access controller (MAC). A shared management data bus is also disclosed as coupled to the PHYs and NID, carrying configuration information and auto negotiation results (see col. 8, lines 16-21; col. 18, lines 49-57). Furthermore, the reference teaches the step of receiving auto negotiation results from each PHY (see Figure 9; method “700”). However, the cited prior art fails to teach a *plurality* of network interface devices (NIDs) coupled to the PHYs. In addition, the Booth et al. does not teach the step of *configuring* the MAC of each NID in accordance with auto negotiation results for a corresponding PHY. Regarding these limitations, Trans teaches a MAC section having a plurality of MACs (see Figure 1C, “131”, “132”). In addition, PHY device teaches the step of providing results (see [0185]) to the *higher-level MAC*, for configuration purposes. At

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the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures in order to obtain a network interface system (see Booth et al.) with “precise control” (see Trans, Abstract) of network parameters, where the communication would be “measured” and “calibrated”.

As for claim 11, Booth et al. teaches the PHY devices as incorporated into a single chip (see Figure 5).

As per claim 12, Booth et al. discloses a shared management data bus as coupled to the PHYs and NID, carrying configuration information and auto negotiation results (see col. 8, lines 16-21; col. 18, lines 49-57).

As per claim 13, Booth et al. does not explicitly teach the step of configuring a NID (having a MAC) as a *master* or directing all auto negotiation results and prescribed configuration information through the master NID, as claimed. Regarding these limitations, Trans teaches a MAC section having a plurality of MACs (see Figure 1C, “131”, “132”). In addition, PHY device provides results (see [0185]) to the *higher-level MAC* for configuration purposes.

As for claim 14, Booth et al. teaches a method providing management data input/output (MDIO) logic (see col. 8, line 18) for changing control values (“configuration information”) for the PHY and coupled to the data bus and NID (see col. 18, lines 52-57).

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6. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Booth et al. [US 6,516,352 B1] in view of Trans [US 2001/0038674 A1] in further view of Carcerano et al. [US 6,308,205 B1].

As for claim 5, the combination of references teaches configuration information, as presented in rejection for previous claims. However, the cited combination fails to teach a *configuration source* as being an electronically erasable programmable read only memory (EEPROM). In consideration of this limitation, Carcerano et al. teaches an EEPROM which is changed in order to manage a NID (network interface device), including changing the *configuration* of the NID (see col. 6, lines 53-67). Accordingly, one of ordinary skill in the art would have been motivated to modify the combination of references (Booth et al. in view of Trans) in order to obtain an updateable process by storing it in an EEPROM (see Carcerano et al.). Carcerano et al. accomplishes this by providing the ability to update the EEPROM version for the network interface device (NID).

7. Claims 6, 8, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Booth et al. [US 6,516,352 B1] in view of Trans [US 2001/0038674 A1] in further view of Joung et al. [US 6,628,613 B1].

As for claim 6, the combination of references teaches auto negotiation results. However, the combination of references fails to teach a *pause ability* of the link partner of the PHY. Regarding this limitation, Joung et al. teaches that the “pause frame” (see col. 1, lines 25-37) is

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one form of control frames, which is defined under the IEEE 802.3 standard. Regarding this limitation, Booth et al. also discloses the IEEE 802.3 standard for network communication (see col. 3, line 32 and 49; col. 18, line 53). Accordingly, one of ordinary skill in the art would have been motivated to modify the cited combination of references by including “pause ability” in order to provide *control of the information flow* and prevent sending packet information in the event of congestion.

As for claim 8, the combination of references teaches auto negotiation results. However, the combination of references fails to teach a *pause ability* of the MAC. Regarding this limitation, Joung et al. teaches that the “pause frame” (see col. 1, lines 25-37) is one form of MAC (Media Access Control) control frames, which is defined under the IEEE 802.3 standard. Regarding this limitation, Booth et al. also discloses the IEEE 802.3 standard for network communication (see col. 3, line 32 and 49; col. 18, line 53). One of ordinary skill in the art would have been motivated to modify the cited combination of references by including “pause ability” in order to provide *control of the information flow* and prevent sending packet information in the event of congestion.

As for claim 15, the combination of references teaches configuration information. In particular, Booth et al. teaches information regarding speed and type of link (see col. 16, line 43). However, the combination of references fails to teach a *pause ability* of the MAC. Regarding this limitation, Joung et al. teaches that the “pause frame” (see col. 1, lines 25-37) is one form of MAC (Media Access Control) control frames, which is defined under the IEEE 802.3 standard.



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Booth et al. also discloses the IEEE 802.3 standard for network communication (see col. 3, line 32 and 49; col. 18, line 53). One of ordinary skill in the art would have been motivated to modify the cited combination of references by including “pause ability” in order to provide *control of the information flow* and prevent sending packet information in the event of congestion.

As per claim 16, Booth et al. teaches MAC configuration registers (see col. 20, lines 57-67). Nonetheless, the cited art does not teach setting a “pause ability” of the MAC. Trans fails to teach this limitation as well. Joung et al. discloses a “pause frame” (see col. 1, lines 25-37), which is one form of control frames defined under the IEEE 802.3 standard. Accordingly, Booth et al. also discloses the IEEE 802.3 standard for network communication (see col. 3, line 32 and 49; col. 18, line 53). One of ordinary skill in the art would have been motivated to modify the cited combination of references by including “pause ability” in order to provide *control of the information flow*.

#### ***Allowable Subject Matter***

8. Claims 9 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

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- Mangin et al. [US 6,704,280 B1] teaches MAC pause control frame.
- Hubacher et al. [US 6,487,601 B1] teaches dynamic MAC allocation and configuration.
- Boucher et al. [US 6,434,620 B1] discloses MAC configuration.
- Allison et al. [US 6,345,310 B1] teaches determining the state of MACs in a chip.
- Runaldue [US 6,160,436] teaches auto negotiation unit for configuration.
- Dreyer et al. [US 6,098,103] teaches automatic MAC control frame generating apparatus for LAN flow control.
- The Authoritative Dictionary of IEEE Standards Terms, 7<sup>th</sup> Edition. IEEE © 2000, "IEEE Std 802.3" Pages 1309-1310.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel L. Casiano whose telephone number is 703-305-8301. The examiner can normally be reached on 9:30-6:30 pm.

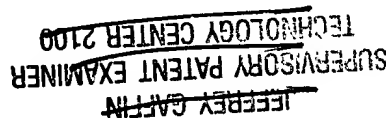
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

alc  
17 May 2004

  
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